

CLAIMS

1. A method for fire-fighting, the method comprising:

piercing a shell (8) of a burning object by pushing at least one elongated piercing tool (7) arranged in a rescue boom (3) from the side (8a) of a first surface of the shell (8) to the side (8b) of a second surface thereof;

feeding, along at least one longitudinal channel in the piercing tool (7), a fire extinguishing medium to a nozzle (12) provided in the piercing tool (7); and

spraying the fire extinguishing medium to the side (8b) of the second surface of the shell (8) through a plurality of orifices (17) provided in the nozzle (12),

characterized by directing a plurality of single jets (20) expelled from the orifices (17) so that they form a single uniform jet (13) having a flat curtain-like shape.

2. A method as claimed in claim 1, **characterized** by using at least one curtain-like jet (13) in order to confine a seat of fire (29).

3. A method as claimed in claim 1 or 2, **characterized** by turning the nozzle (12) around the longitudinal axis of the piercing tool (7) in order to turn the curtain-like jet (13).

4. A method as claimed in claim 1 or 2, **characterized** by turning the piercing tool (7) around its longitudinal axis in order to turn the curtain-like jet (13).

5. A rescue boom comprising:

a boom (3) provided with at least one movable boom part (5a, 5b) connected to a base (2);

at least one piercing tool (7) arranged at a free end of the boom (3), the piercing tool (7) being an elongated piece comprising at least one longitudinal channel;

at least one actuator (34) for moving the piercing tool (7) in the longitudinal direction of the piercing tool (7) with respect to an outermost end of the boom (3);

at least one feed channel (11) for feeding a fire extinguishing medium to the channel in the piercing tool (7); and

at least one nozzle (12), which is an elongated piece and which is connected to the channel in the piercing tool (7), the fire extinguishing medium

being arranged to be fed through a plurality of orifices (17) provided in the nozzle (12),

characterized in that in the longitudinal cross section of the nozzle (12), the orifices (17) in the nozzle (12) are arranged to pass via substantially the same imaginary plane so that the fire extinguishing medium fed through the orifices (17) is arranged to form a single uniform jet (13) having a flat curtain-like shape.

6. A rescue boom as claimed in claim 5, **characterized** in that means are provided in connection with the piercing tool (7) for turning the curtain-like jet (13) expelled from the nozzle (12) with respect to the longitudinal axis of the piercing tool (7).

7. A nozzle of a piercing tool for spraying a fire extinguishing medium, the nozzle (12) being an elongated piece having a front end and a rear end and the nozzle (12) comprising:

fastening means at the rear end of the nozzle (12) for fastening the nozzle (12) to the piercing tool;

at least one feed channel (11) for feeding a fire extinguishing medium to the nozzle (12); and

a plurality of orifices (17) extending from the feed channel (11) to an outer surface of the nozzle (12), the orifices (17) being directed obliquely forwards such that the farther away from the front end of the nozzle (12) a single orifice resides, the larger an acute angle between the middle axis (18) of the orifice and the middle axis (28) of the nozzle,

characterized in that in the longitudinal cross section of the nozzle (12), the orifices (17) are arranged to pass via substantially the same imaginary plane so that the fire extinguishing medium fed through the orifices (17) is arranged to form a single uniform jet (13) having a flat curtain-like shape.

8. A nozzle as claimed in claim 7, **characterized** in that the cross section of the single orifices (17) in the nozzle (12) is dimensioned to be the larger the smaller the angle between the middle axis (18) of the orifice and the middle axis (28) of the nozzle so that the curtain-like jet (13) is arranged to extend to a larger distance at the front of the nozzle (12) than on the sides of the nozzle (12).

9. A nozzle as claimed in claim 7 or 8, **characterized** in that the nozzle (12) is a sleeve-like piece, and

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the front end of the nozzle (12) is provided with connecting means for fastening a separate tip piece.

10. A nozzle as claimed in any one of claims 7 to 9, **characterized** in that

in the longitudinal cross section of the nozzle (12), the orifices (17) are arranged successively in a first line of orifices (21) and in a second line of orifices (22), and

the first line of orifices (21) resides on a first side of the middle axis (28) of the nozzle while the second line of orifices (22) resides on a second side of the middle axis (28) thereof so that the nozzle (12) is arranged to form a uniform, curtain-like jet (13) extending to the sides and to the front of the nozzle (12).

11. A nozzle as claimed in claim 10, **characterized** in that the outer surface of the nozzle (12) is provided with at least one longitudinal groove (26a, 26b) at the first line of orifices (21) and at least one longitudinal groove (26c, 26d) at the second line of orifices (22).

12. A nozzle as claimed in claim 11 or 12, **characterized** in that

two longitudinal grooves (26a, 26b; 26c, 26d) are provided successively both at the first line of orifices (21) and at the second line of orifices (22), and

as seen from the front end of the nozzle (12), the first grooves (26b, 26d) extend to a section of the first orifices (17) as seen from the front end of the nozzle (12) only.

13. A nozzle as claimed in claim 11 or 12, **characterized** in that the shape of the bottoms of the grooves (26a to 26d) in the outer surface of the nozzle (12) is inwardly curved.